COMMENTS FROM SITE 14

Site 14 Acc Pinnacle

a. No reflection off of the pinnacle
b. Estar had edge of west end of build in its way

Northpoint Technology – DBS Compatiblilty Test – Austin Test Area

Rx Site Data Log

South I-35 Wind.

Rx Site No. 15 p1

Set: 1 / 1

Re: Rx Condx Ref. No. 2 Date / Time: 12/28/98 4:50 CST

Re: Tx Condx Ref. No. 2 Operator: MWH

Data Measurements:

(1) On arrival -- - Position and deploy antenna platform (first at ground level).
- Position GPS Receiver and allow to average during site occupation.
- Obtain information for Rx Site Location Log.
- Point Precision Horn Antenna toward Tx (approx. direction).

(2) DBS Signal Interference Tests – DirecTV and EchoStar.

For each satellite case (one at a time), with Tx OFF, point DBS Antenna to the satellite and peak the signal strength. Observe the monitor for the prescribed TV channel (w/ appropriate DBS Rx) and assess signal quality. Turn Tx ON and observe the TV signal quality. Note any change in signal quality that is correlated with the Tx ON/OFF condition. Repeat Tx ON/OFF sequence as needed.

With the Spectrum Analyzer (SA), observe and record the Signal Power Spectrum and its peak value at the LNB output for the two Tx states (ON/OFF). Label the Spectrum Plots and mark them with an assigned ID code.

DirecTV – Tx OFF: OK? Y___ / N ___ Tx ON: OK? Y X / N___

Any behavior correlated with Tx ON/OFF ? Y___ / N___

Comments: _____.

Signal Power Spectrum – Tx ON: --Peak -- -61.10 dBm Plot ID Code 15-D.
Tx OFF: – Peak -- _____dBm Plot ID Code _____.
Comments: _____.

EchoStar – Tx OFF: OK? Y___ / N ___ Tx ON: OK? Y X / N___

Any behavior correlated with Tx ON/OFF ? Y___ / N___

Comments: _____.

Signal Power Spectrum – Tx ON: --Peak -- -58.88 dBm Plot ID Code 15-E.
Tx OFF: – Peak -- _____dBm Plot ID Code _____.
Comments: _____.

Rx Site Data Log

Rx Site No. 15 **p2**
Set: 1 1

(3) Northpoint Signal Quality Test –

With the Tx ON, point the DBS antenna toward the Tx , while using the NP Rx equipment, and peak the signal strength. Observe the monitor (w/ NP Rx equipment) and assess the signal quality.

NP Signal – OK? Y X / N___ Comments: _____.

(4) NP Rx Signal Level and Power Spectrum at Rx Site – LNB output --

With the DBS antenna on the NP Tx, and with the Tx ON, observe and record the Signal Power Spectrum and the peak level at the LNB output. Label the spectrum plot with an assigned ID Code.

Signal Power Spectrum -- Peak -- -61.62 dBm Plot ID Code -- 15-N.

Comments: _____.

(5) Tx Signal Level and Power Spectrum at Rx Site – w/ Precision Ant. and SA.

Using the Precision Antenna and Test Set, observe and record the Tx Signal Power Spectrum and the peak value at the Rx site. Label the spectrum plot with an assigned ID Code.

Signal Power Spectrum -- Peak -- _____ dBm Plot ID Code -- _____.

Comments: _____.

(6) When Rx Site measurements and tests are completed, read the GPS Receiver and record the position in the Rx Site Location Log. Prepare the equipment for movement to the next site.

Use the space below for added comments and notes. Attach extra pages if necessary.

Northpoint Technology – DBS Compatibility Test – Austin Test Area
Signal Strength Readings

Rx Site Data Log **Rx Site No.** 15

Set 1-1

Re: Condx Ref. No. 2 Date / Time 12/28/98 5:05 CST

Re: Condx Ref. No. 2 Operator: MWH

Direct T.V. Signal Strength Readings

Tsp No	Signal Strength Readings										Avg
16	85	85	83	84	84	84	83	83	85	84	84
18	81	82	83	82	82	82	82	83	82	83	82.2
20	85	85	85	86	87	85	87	85	86	85	85.6

Estar T.V. Signal Strength Readings

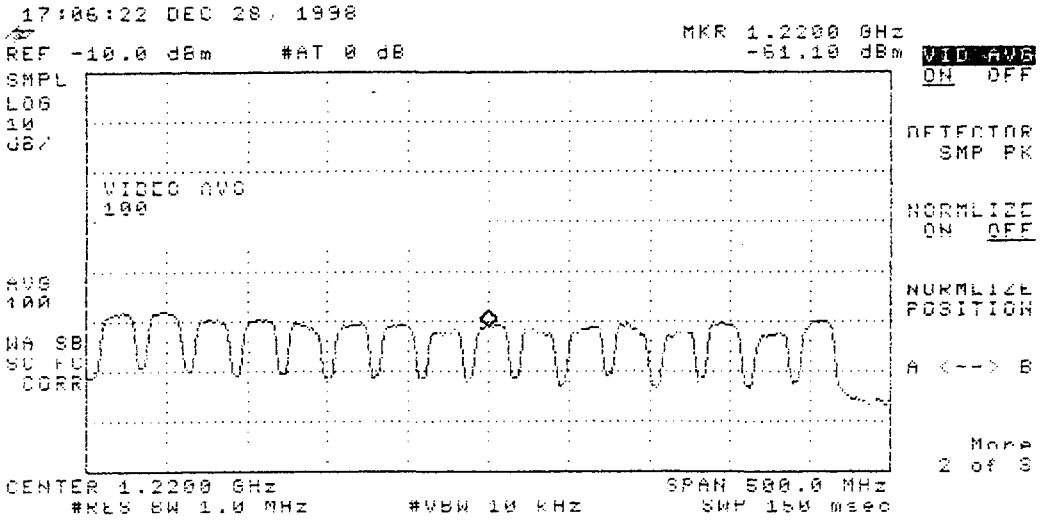
Tsp No	Signal Strength Readings										Avg
16	91	92	92	91	92	92	92	91	91	91	91.5
18	91	91	91	91	91	91	91	91	91	91	91
20	93	93	94	93	94	94	94	94	93	93	93.5

Notes: Partly Cloudly, 70°

1. DTV, Site-15, 12/28/98

2. Boom Down H.P. 8591E

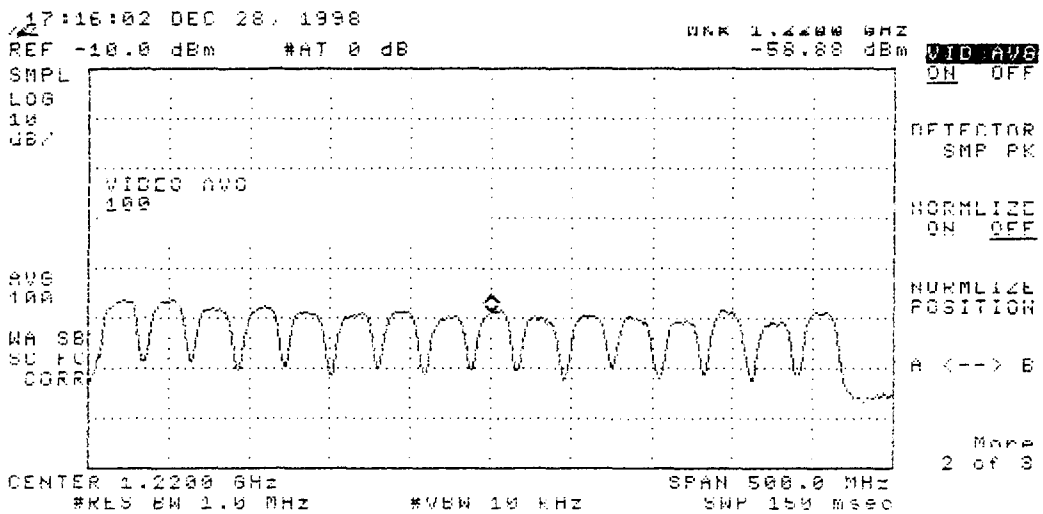
Plot 15-D



1. Estar, Site-15, 12/28/98

2. Boom Down, H.A. 8591E

Plot 15-E

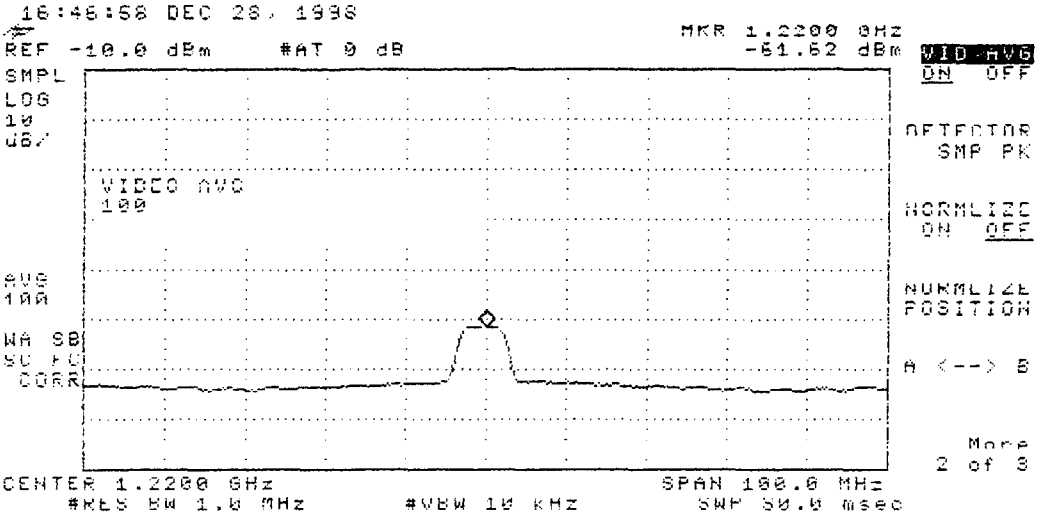


1. N.P. Tx., Site-15, Set-1, 12/28/98

2. Picture Good on T.V.

3. Boom Down, H.A. 8591E

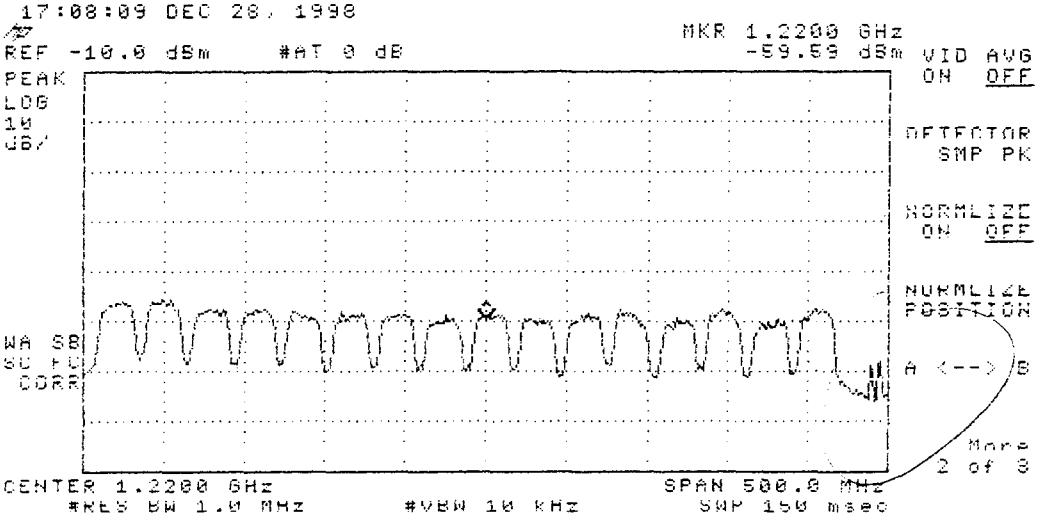
Plot-15-N



1. DTV with spikes

2. 12/28/98 Boom Down

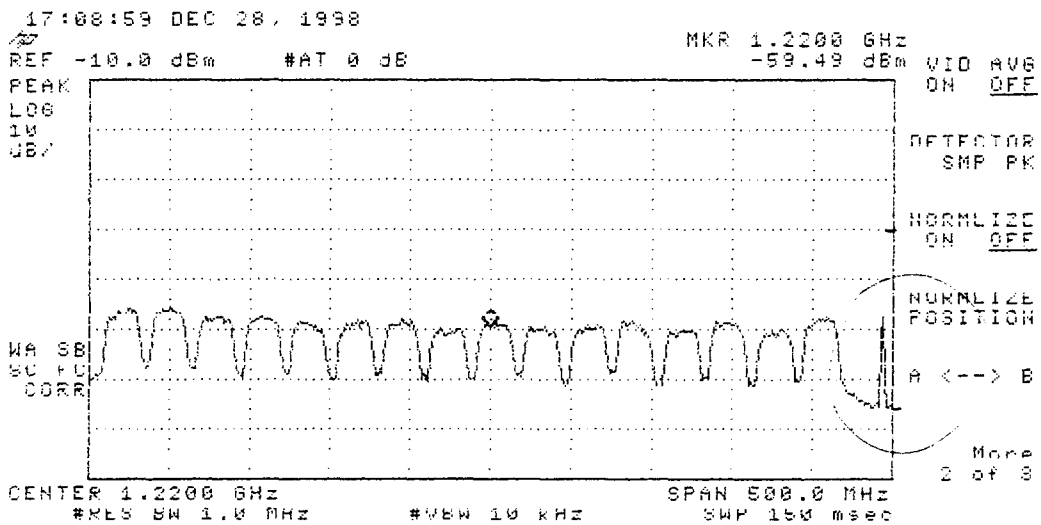
Plot 15-D-S1



1. DTV with Spikes (12/28/98)

2. Site-15, Boom Down

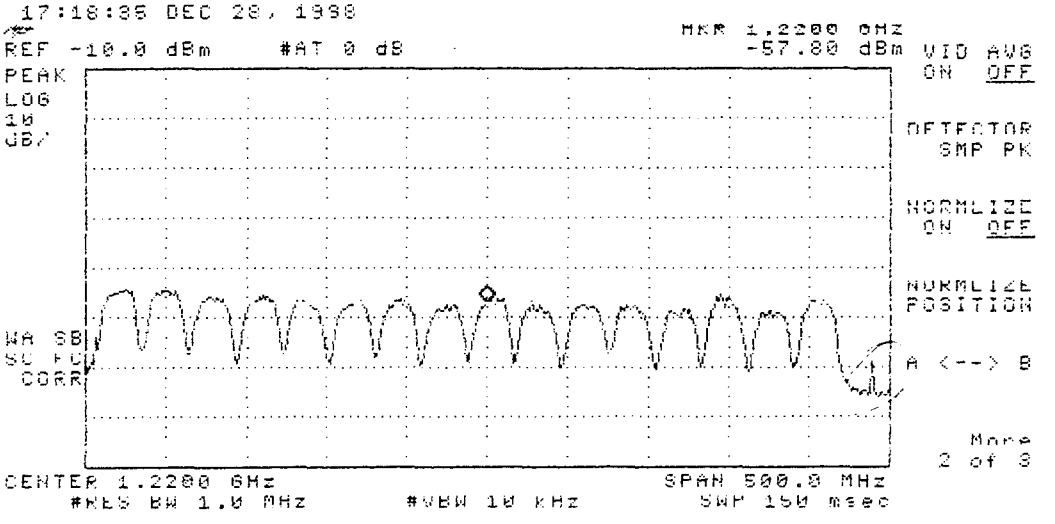
Plot 15-D-52



1. Spike can go as high as 34dB

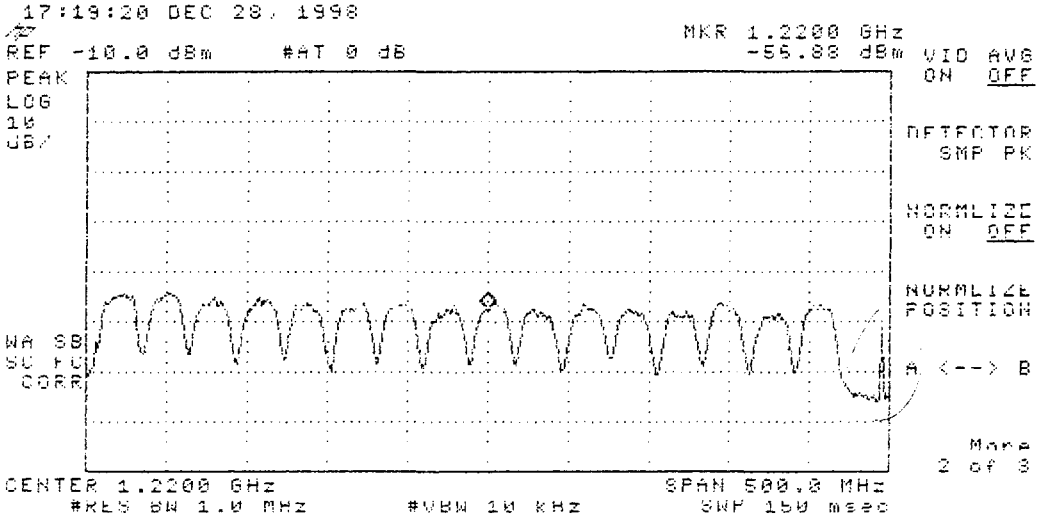
1. Site-15, Estar with Spikes.
2. 12/28/98 Boom Down.

15-E-52



1. Site-15, Estar with Spikes
2. 12/28/98 Boom Down

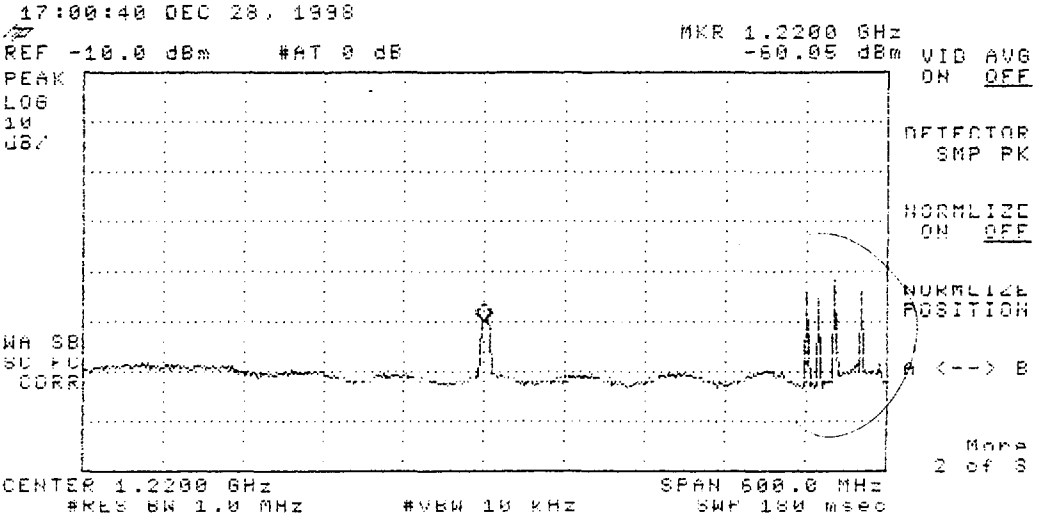
Plot 15-E-S1



1. Site-15 (Taken For Spikes)

2. N.P. Tx

Plot 15-N-S



COMMENTS FROM SITE 15

Site 15 South I-35

a. Have five plots of spikes in the ~ 1.2450 GHz range
   Can be seen on all three plots NP, DTV, and Estar

Northpoint Technology – DBS Compatiblilty Test – Austin Test Area

Rx Site Data Log Davis Ln Hill

Rx Site No. 16 Davis Ln p1
Set: 1 / 1

Re: Rx Condx Ref. No. 2 Date / Time: 12/29/98 12:15 CST

Re: Tx Condx Ref. No. 2 Operator: JMB

Data Measurements:

(1) On arrival -- - Position and deploy antenna platform (first at ground level).
- Position GPS Receiver and allow to average during site occupation.
- Obtain information for Rx Site Location Log.
- Point Precision Horn Antenna toward Tx (approx. direction).

(2) DBS Signal Interference Tests – DirecTV and EchoStar.

For each satellite case (one at a time), with Tx OFF, point DBS Antenna to the satellite and peak the signal strength. Observe the monitor for the prescribed TV channel (w/ appropriate DBS Rx) and assess signal quality. Turn Tx ON and observe the TV signal quality. Note any change in signal quality that is correlated with the Tx ON/OFF condition. Repeat Tx ON/OFF sequence as needed.

With the Spectrum Analyzer (SA), observe and record the Signal Power Spectrum and its peak value at the LNB output for the two Tx states (ON/OFF). Label the Spectrum Plots and mark them with an assigned ID code.

DirecTV – Tx OFF: OK? Y___ / N ___ Tx ON: OK? Y X / N___

Any behavior correlated with Tx ON/OFF ? Y___ / N___

Comments: _____.

Signal Power Spectrum – Tx ON: --Peak -- -60.22 dBm Plot ID Code 17-D.
Tx OFF: – Peak -- _____dBm Plot ID Code _____.
Comments: _____.

EchoStar – Tx OFF: OK? Y___ / N ___ Tx ON: OK? Y X / N___

Any behavior correlated with Tx ON/OFF ? Y___ / N___

Comments: _____.

Signal Power Spectrum – Tx ON: --Peak -- -62.35 dBm Plot ID Code 18-E.
Tx OFF: – Peak -- _____dBm Plot ID Code _____.
Comments: _____.

Rx Site Data Log

Rx Site No. 16 **p2**
Set: 1

(3) Northpoint Signal Quality Test –

With the Tx ON, point the DBS antenna toward the Tx , while using the NP Rx equipment, and peak the signal strength. Observe the monitor (w/ NP Rx equipment) and assess the signal quality.

NP Signal – OK? Y X / N___ Comments: _____.

(4) NP Rx Signal Level and Power Spectrum at Rx Site – LNB output --

With the DBS antenna on the NP Tx, and with the Tx ON, observe and record the Signal Power Spectrum and the peak level at the LNB output. Label the spectrum plot with an assigned ID Code.

Signal Power Spectrum -- Peak -- -58.47dBm Plot ID Code -- 16 - N.

Comments: _____.

(5) Tx Signal Level and Power Spectrum at Rx Site – w/ Precision Ant. and SA.

Using the Precision Antenna and Test Set, observe and record the Tx Signal Power Spectrum and the peak value at the Rx site. Label the spectrum plot with an assigned ID Code.

Signal Power Spectrum -- Peak -- _____ dBm Plot ID Code -- _____.

Comments: _____.

(6) When Rx Site measurements and tests are completed, read the GPS Receiver and record the position in the Rx Site Location Log. Prepare the equipment for movement to the next site.

Use the space below for added comments and notes. Attach extra pages if necessary.

Northpoint Technology – DBS Compatibility Test – Austin Test Area
Signal Strength Readings

Rx Site Data Log **Rx Site No.** 16

Set 1 / -

Re: Condx Ref. No. 0 Date / Time 12/09/98 12:15 CST

Re: Condx Ref. No. 2 Operator: JMS

Direct T.V. Signal Strength Readings

~~Tx~~ Tsp No	Signal Strength Readings										Avg
16	88	89	89	89	87	87	87	89	89	87	88.1
18	86	87	88	88	86	86	87	86	86	86	86.6
20	87	89	89	87	87	89	89	87	87	88	88.9

Estar T.V. Signal Strength Readings

~~Tx~~ Tsp No	Signal Strength Readings										Avg
16	81	81	82	80	81	80	80	80	80	80	80.7
18	79	79	78	80	80	80	80	81	80	80	79.8
20	83	83	83	83	83	84	83	82	83	83	83

Notes Sunny, windy, clear, 65°

Wind moves boom around

Date: 12-29-98

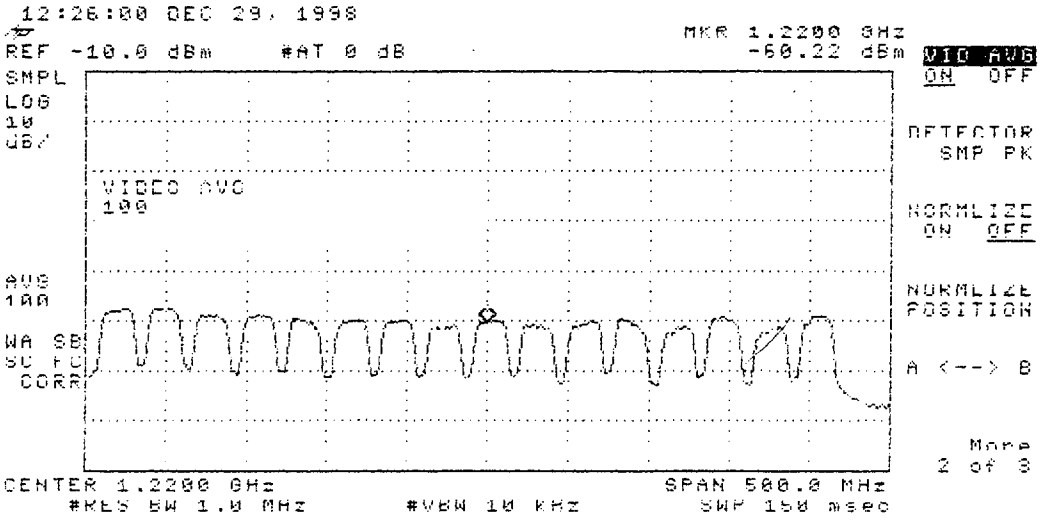
Plot 16-D

Site: 16

Set: 1

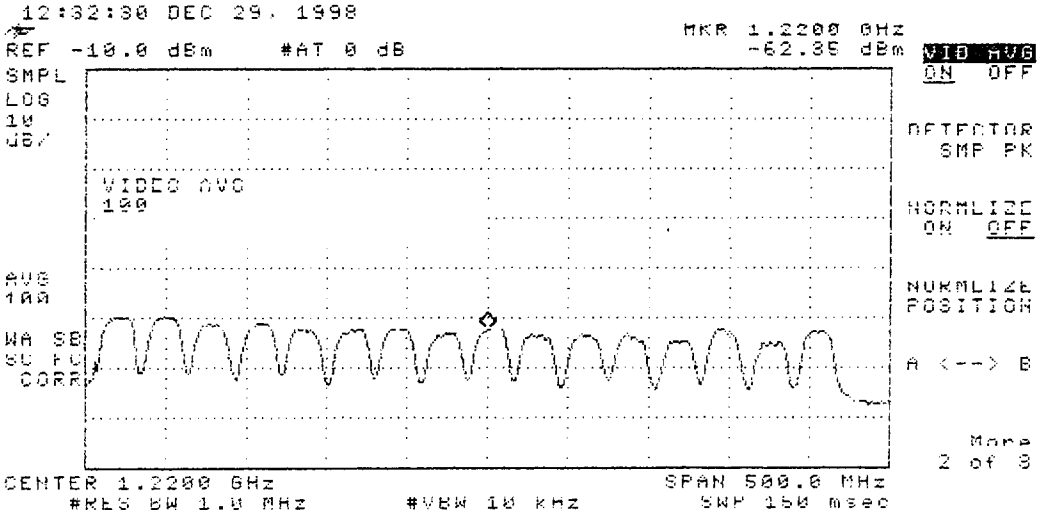
Tx: Direct TV

Boom: 28 feet



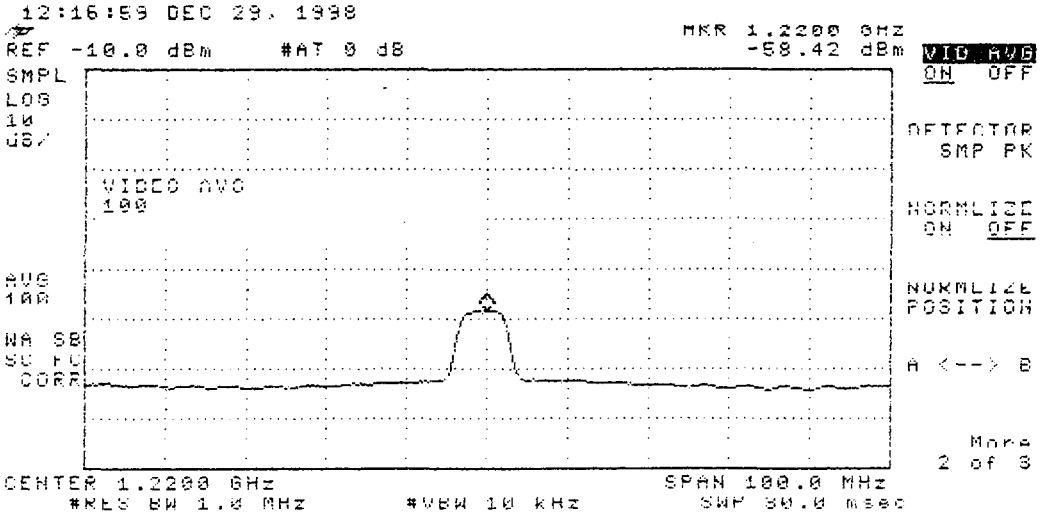
Date: 12-29-98
Site: 1b
Set: 1
Tx. Echostar
Boom: 28 feet

Plot 16E



Plot: 16-N

Date: 12-29-98
Site: 16
Set: 1
Transmitter: NP
Boom: 28 feet
Picture is good
Antenna was pointed through tree



Date: 12-29-98

Plot 16-NA

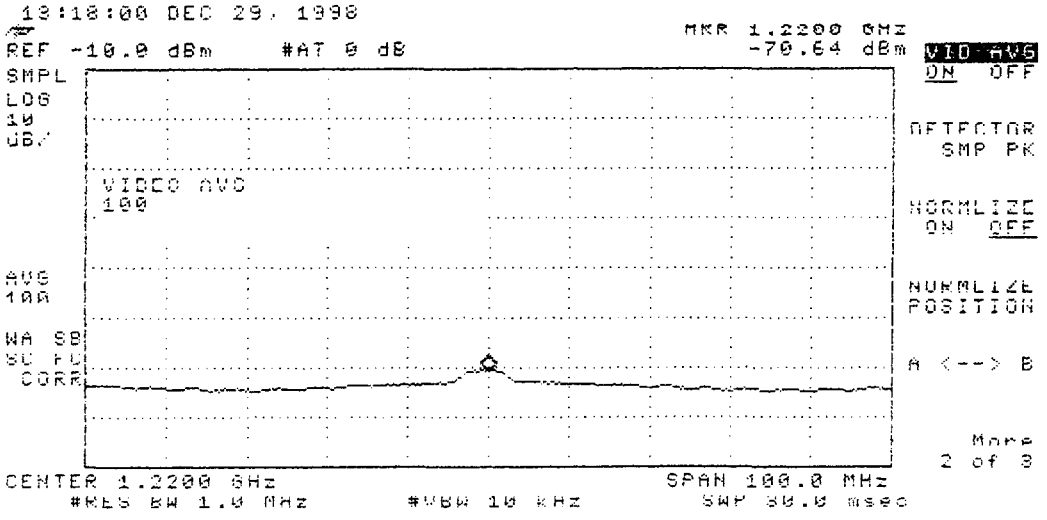
Site: 16

Set: 1

Tx; NP

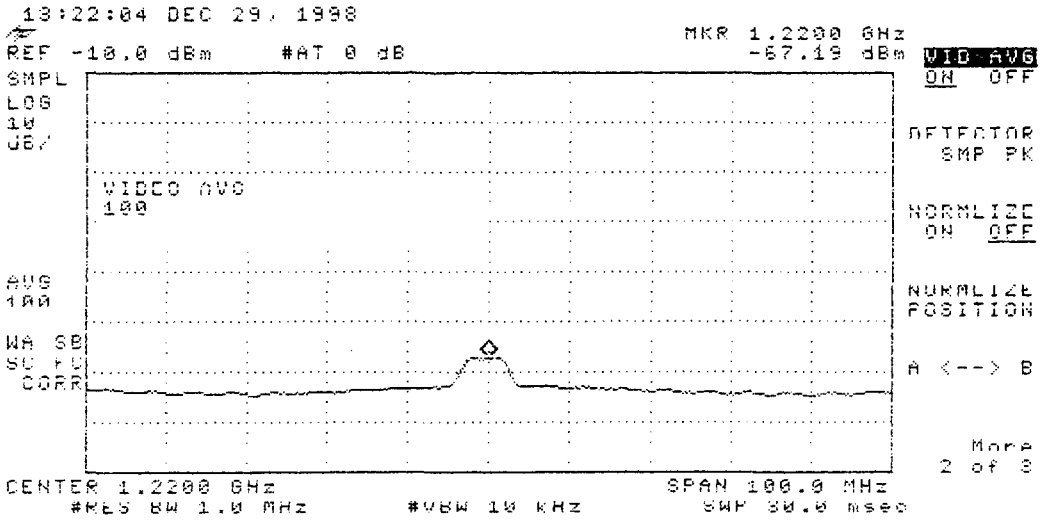
Boom: 22ft

Barely see top of bldg thru trees. (1st tree 100yds away next 50ft beyond that.) No picture



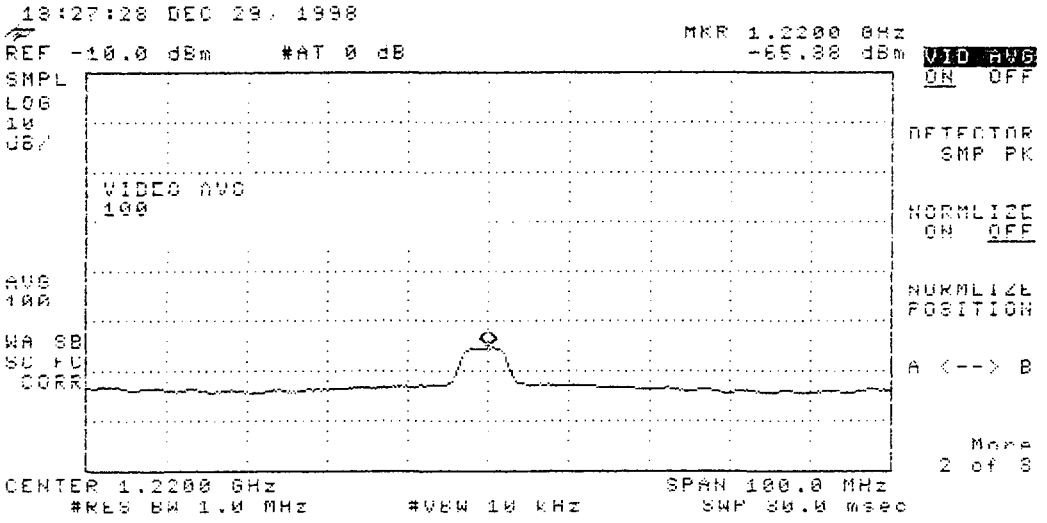
Date: 12-29-98
Site: 16
Set: 1
Tx: NP
Boom: 25 ft
Picture intermittent
Same test condition as Plot 16-NA

Plot 16-NB



Plot 16NC

Date: 12-29-98
Site: 16
Set: 1
Tx: NP
Boom 25 ft 3 in.
Picture good. Same tree conditions as 16NA



COMMENTS FROM SITE 16

Site 16 Davis Ln Hill

a. Wind moving boom around
b. NP was pointing through a tree on plot 16-N (boom at 28')
c. NP plot with boom at 22'. Can barely see top of building through trees. First tree is 100 yards away, next one 50 yards away, no picture
d. NP plot with boom at 25'. Can barely see top of building through trees. First tree is 100 yards away, next one 50 yards away, picture intermittent
e. NP plot with boom at 25' 3''. Can barely see top of building through trees. First tree is 100 yards away, next one 50 yards away, picture good

Northpoint Technology – DBS Compatiblilty Test – Austin Test Area

Thaxton

Rx Site Data Log

Rx Site No. 17 p1

Set: 1 1 ___

Re: Rx Condx Ref. No. 2 Date / Time: 12/29/98 3:10 CST

Re: Tx Condx Ref. No. 2 Operator: JMB

Data Measurements:

(1) On arrival -- - Position and deploy antenna platform (first at ground level).
- Position GPS Receiver and allow to average during site occupation.
- Obtain information for Rx Site Location Log.
- Point Precision Horn Antenna toward Tx (approx. direction).

(2) DBS Signal Interference Tests – DirecTV and EchoStar.

For each satellite case (one at a time), with Tx OFF, point DBS Antenna to the satellite and peak the signal strength. Observe the monitor for the prescribed TV channel (w/ appropriate DBS Rx) and assess signal quality. Turn Tx ON and observe the TV signal quality. Note any change in signal quality that is correlated with the Tx ON/OFF condition. Repeat Tx ON/OFF sequence as needed.

With the Spectrum Analyzer (SA), observe and record the Signal Power Spectrum and its peak value at the LNB output for the two Tx states (ON/OFF). Label the Spectrum Plots and mark them with an assigned ID code.

DirecTV – Tx OFF: OK? Y___ / N ___ Tx ON: OK? Y X / N___

Any behavior correlated with Tx ON/OFF ? Y___ / N___

Comments: _____.

Signal Power Spectrum – Tx ON: --Peak -- -60.8 dBm Plot ID Code 17-D.
Tx OFF: – Peak -- _____dBm Plot ID Code _____.
Comments: _____.

EchoStar – Tx OFF: OK? Y___ / N ___ Tx ON: OK? Y X / N___

Any behavior correlated with Tx ON/OFF ? Y___ / N___

Comments: _____.

Signal Power Spectrum – Tx ON: --Peak -- -59.9 dBm Plot ID Code 17-E.
Tx OFF: – Peak -- _____dBm Plot ID Code _____.
Comments: _____.

Rx Site Data Log

Rx Site No. 17 p2
Set: 1/

(3) Northpoint Signal Quality Test –

With the Tx ON, point the DBS antenna toward the Tx , while using the NP Rx equipment, and peak the signal strength. Observe the monitor (w/ NP Rx equipment) and assess the signal quality.

NP Signal – OK? Y X / N___ Comments: _____.

(4) NP Rx Signal Level and Power Spectrum at Rx Site – LNB output --

With the DBS antenna on the NP Tx, and with the Tx ON, observe and record the Signal Power Spectrum and the peak level at the LNB output. Label the spectrum plot with an assigned ID Code.

Signal Power Spectrum -- Peak -- -51.30 dBm Plot ID Code -- 17-N.

Comments: _____.

(5) Tx Signal Level and Power Spectrum at Rx Site – w/ Precision Ant. and SA.

Using the Precision Antenna and Test Set, observe and record the Tx Signal Power Spectrum and the peak value at the Rx site. Label the spectrum plot with an assigned ID Code.

Signal Power Spectrum -- Peak -- _____ dBm Plot ID Code -- _____.

Comments: _____.

(6) When Rx Site measurements and tests are completed, read the GPS Receiver and record the position in the Rx Site Location Log. Prepare the equipment for movement to the next site.

Use the space below for added comments and notes. Attach extra pages if necessary.